

MINDFULNESS AND STRESS MANAGEMENT

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We live in high stress world. Countless people suffer from chronically high levels of stress every day. Stress keeps many people up at night, when they wish they could get some sleep.

What is behind this? What is stress after all? When we say we are stressed out, what do we mean by that? In the first part of this paper, we will look at the nature of stress, what it is, what causes it and how it affects us physiologically. In the second, we will turn to consider how mindfulness can help us to cope with the stress of daily life. In particular, we will look at a therapeutic intervention called Mindfulness Based Stress Reduction (MBSR), that studies again and again have shown to be effective in reducing stress.

Let's begin by looking at the major causes of stress around the world. In a study of 22 countries worldwide, just released by GfK, a German research group, it was found that the number one cause of stress worldwide is money. The second is putting too much pressure on yourself, and the third, interestingly, is sleep deprivation. When we are sleep deprived, we are easily irritated, can't think clearly and too often feel that we are dragging ourselves through life by the collar. It is little wonder that this is a major stressor for many.

These rankings differ from country to country. For instance, in Latin American countries, "threat of crime" appeared in the top 5, but not in other countries. However, these three showed up as major stressors in every country surveyed.

So what causes stress? The simple answer is a perceived threat. Whenever you feel stressed out, you believe there is some threat looming on the horizon that you need to avoid.

Here is another way to think of it. We all have demands placed upon us by life and others—we believe we *must* pay our utility bills, meet deadlines at work, impress our boss, take care of our aging parents, wear the most fashionable clothes, etc. When the demands in our life outweigh our resources for dealing with those demands, stress is the result.

Stress, however, is not necessarily bad. Life would be boring without some of it, which is a common experience for retirees who suddenly find themselves with few challenges. Some become so bored they seek out new demands by volunteering or returning to work. Others sink into depression, and a few even seem to die from boredom and lack of challenges.

The goal, then, is to find a healthy balance between the demands placed upon us and the resources we possess for dealing with these demands. We might imagine the relation between demands and resources in our life as a playground seesaw with demands on one side

and the resources on the other. If the end of the seesaw that holds our resources is sitting on the ground, then we are most likely bored. But if the end holding the demands sits on the ground (as in the cartoon), we become stressed out. Ideally, we want both ends of the seesaw to be off the ground and at similar heights so our resources are sufficient to meet the demands we face.

Stress comes from both internal and external sources. The number one stressor around the world—money—is an external stressor. Other external sources of stress include family, the weather, the environment, and major life events, such as births, deaths, marriages, and divorces. Change is stressful, even good change such as having a baby. After all, raising children is often a major source of stress for parents. Indeed, in France, raising children was ranked among the top five sources of stress. What is more, globalization has caused mounting pressure at work for greater productivity, causing worker burnout, as exhausted employees work longer hours and even refuse vacation time out of fear of losing their competitive edge.

Droughts, floods, tornados, earthquakes, hurricanes, and extreme temperatures produce high levels of stress for many around the world, especially the poor. In Latin America, crime is rampant and the source of considerable stress. War ravages the lives of many in the Middle East.

Internal sources of stress can be even more challenging than external ones. Many people put a lot of pressure on themselves to perform—they believe their value is dependent on how well they perform. As we have seen, putting too much pressure on yourself is the second biggest stressor worldwide. Others suffer from physical and mental illnesses, drug addictions, and unhealed emotional wounds from childhood. Spiritual emptiness is another painful source of internal stress, such as feeling like our life has no meaning or purpose, or feeling alienated from others. And we must all face the reality of our impending death and the death of those dear to us. "Life is suffering," said the Buddha. We might say "life is stressful," and it is.

As I said, stress is not necessarily bad. There is very good research that suggests that a moderate dose of stress at times can increase our capacity to perform, produce, function at a high level. Think of those times when you had a paper to write or job to complete. Stress can help us manage our resources, to think more clearly, to "get the job done."

The problem is when it becomes chronic—our stress response system gets turned on, but never turned off. There is nothing wrong with being able to shift your car into high gear, there is a problem, though, if you can't shift it out. We always then feel stressed out. We can't get to sleep at night because we have all this nervous energy bottled up inside of us.

The long-term activation of the stress-response system can disrupt almost all of our body's processes. It compromises our immune system and puts us at increased risk of number of health problems, including:

- Anxiety
- Depression
- Digestive problems
- Chronic headaches, backaches
- Heart disease
- Sleep problems
- Weight gain
- Memory and concentration impairment

There is also a growing body of research that suggests that chronic stress accelerates the aging process.

What can be done to help people deal with chronic, debilitating levels of stress? Dr. Jon Kabat-Zinn has developed a successful program for helping people cope with stress, called Mindfulness Based Stress Reduction (MBSR), at the University of Massachusetts Medical Center, which is now offered in over 200 medical centers, hospitals, and clinics around the world. MBSR is an 8-week intensive training in mindfulness meditation, based on ancient healing practices. Taught by certified trainers, it includes weekly group meetings, homework, and instruction in a number of mindfulness practices, which include sitting meditation, body scanning, choiceless awareness meditation and simple yoga postures.

More than two decades of published research indicates that the majority of people who complete the MBSR curriculum report:

- Lasting decreases in physical and psychological symptoms
- An increased ability to relax
- Reductions in pain levels and an enhanced ability to cope with pain that may not go away
- Greater energy and enthusiasm for life
- Improved self-esteem
- An ability to cope more effectively with both short- and long-term stressful situations

In the MBSR program, participants study what Jon Kabat-Zinn calls the Stress Reaction Cycle. Here is a handout from one of the sessions. Imagine you are this person here. Here are the stressors in your life. Some are external, some internal. When these stressors start to pile up, a bodily reaction is triggered, called the "fight or flight" response. This affects all the systems of your body—nervous, cardiovascular, digestive, immune, and muscular-skeletal.

The fight or flight response is common to all animals. It was discovered by the Harvard physiologist Walter Cannon back in the early 1900s. He studied it first extensively in cats. So, let's look at cats. We all know cats can be as lazy as dogs. They love to just lie around all day long, often in places where they do not belong, and do nothing. Well, imagine your cat is curled up on the steps of your house, as relaxed as can be, and suddenly, a dog comes by and barks at her. What happens?

Your cat will jump up, right? The cat senses a threat, perhaps a mortal threat. Her back arches, her hair stands on end, her body is primed to either fight or flee the situation. She may let out a high pitched "meow." This is the fight or flight response.

All animals have similar physiological responses to immanent threats in their environments. We too have a flight or fight response that is meant to protect us from immanent dangers to our lives. This response is hard-wired into our brains, more precisely into the hypothalamus, which—when stimulated—initiates a sequence of nerve cell firings and chemical releases that prepare our body for running or fighting.

When our fight or flight response is activated, arrays of nerve cells fire and chemicals like adrenaline, noradrenaline and cortisol are released into our bloodstream. This causes our body to undergo a series of rather dramatic changes. Our respiratory rate increases. Blood is shunted away from our digestive tract and directed into our muscles and limbs, which require extra energy and fuel for running and fighting. Our pupils dilate. Our hair stands on end. Our sensitivity to pain is dulled, and our immune system shifts into high gear. We become prepared—physically and psychologically—for fight or flight. Our life after all might be at stake.

In life threatening situations, people have been recorded to perform super human feats under the influence of this response. This news item, which ran in the Boston Globe, gives us an example.

Arnold Lemerand, of Southgate, Mich., is 56 years old and had a heart attack six years ago. As a result, he doesn't like to lift heavy objects. But this week, when Philip Toth, age 5, became trapped under a cast iron pipe near a playground, Lemerand easily lifted the pipe and saved the child's life. As he lifted it, Lemerand thought to himself that the pipe must weigh 300 to 400 pounds. It actually weighed 1800 pounds, almost a ton. Afterward, Lemerand, his grown sons, reporters and police tried to lift the pipe but couldn't.¹

This anecdote illustrates the incredible power of the fight-or-flight response. It also demonstrates that in an emergency, you really don't stop to think. If Mr. Lemerand had thought about the weight of the pipe before he tried to lift it, or about his heart condition, he probably would not have been able to lift it.

¹Jon Kabat-Zinn, *Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain and Illness (Revised Edition)*. (New York: Bantam Books, 2013), Kindle edition.

Our fight or flight response is designed to protect us from lions and the like, real threats to our physical survival. However, as John Kabat-Zinn writes in *Full Catastrophe Living*,

Most of the time we do not find ourselves encountering life-threatening situations in civil society and everyday life. We are not running into mountain lions or other threats as we go to work or deal with family life and social situations. But we are still prone, if not hardwired, to go into fight-or-flight mode when we feel threatened or thwarted in our goals, feelings of safety, or sense of control even if we're just driving on the freeway or walking into work and finding something unexpected that we are going to have to deal with. Our minds still perceive events in terms of mortal threats to our well-being and sense of self, even when there is none.²

Much of our stress nowadays comes from "threats, real or imagined, to our social status, to our sense of how others perceive us."³ But, the fight-or-flight reaction kicks in all the same, even when there is no life-threatening situation facing us. It is sufficient for us just to feel that we are threatened. John Kabat-Zinn writes, "Anything that threatens our sense of well-being—challenges to our social status, our ego, our strongly held beliefs, or our desire to control things or to have them be a certain way—can trigger it to some degree."⁴

Here is a picture I took last week at Watt Langkain Phenom Phen where I go to meditate. There is a cat that loves to come in and rub up against the legs of people as they meditate. Notice how calm this cat is. It may be because this cat likes to meditate. I don't know. But, I show this picture because cats despite the fact that their fight or flight response is triggered many times during the day, do calm back down. They calm down rather quickly actually, even the cats that don't meditate like this one.

It is really remarkable when you look at animals how quickly they can let go of the past. In his book *The New Earth*, the spiritual teacher, Eckhart Tolle comments on the speed with which ducks, after a fight, can return to their baseline stress-free state. He writes, "When two ducks get into a fight, it never lasts long – they soon separate and fly off in opposite directions. Each duck then flaps its wings vigorously several times. This releases the surplus energy that built up in him during the fight. After they flap their wings, they fly on peacefully as if nothing had ever happened."⁵ But, Tolle notes if the duck had a human mind, he wouldn't be able to put the fight behind him so easily. He would spin a story out of the incident, which might go something like "I can't believe that other duck. He came within 2 inches of me. How rude. He thinks he owns this pond. He has no consideration of personal space. I taught him a lesson, but he is probably seeking revenge." He would "keep the fight alive in his mind, through thinking and story-telling."⁶ He would replay the event over and over in his own mind. In reality, our

² Ibid.

³ Ibid.

⁴ Ibid.

⁵ Eckhart Tolle, *A New Earth: Awakening to Your Life's Purpose*. (New York: Penguin Books, 2005), Kindle edition.

⁶ Ibid.

duck is the gliding along smoothly through the water. However, because this duck has a human mind, he is lost in the past. Tolle says, "as far as his body is concerned, the fight is still continuing."⁷ This duck is caught in a continual state of arousal. This is one stressed out duck. The slightest thing can set this duck off.

This is what seems to happen to us. We get stuck in the past. A troubling past event that we play back in our minds, over and over again, triggers the fight or flight response in us over and over again. This leaves us in a state of "chronic hyperarousal," which, as we have seen, is detrimental to our physical and mental health. We feel stressed out. We can't relax like the cat in the picture. In the first class in the Stress Reduction Clinic, Jon Kabat-Zinn used to ask people to take turns describing to the group how it felt to be relaxed. Many people would say "I can't remember it's been so long," or "I don't think I've ever been relaxed."⁸ These people are caught in a state of "chronic hyperarousal."

What is more, Kabat-Zinn notes that because we are social beings that live in social groupings, we often feel the need to suppress the fight or flight response. We pretend we are not aroused. We may do this without even realizing that we are doing it. For instance, suppose your boss yells at you. You are offended and put on the defensive. This triggers the fight or flight response. Yet, you know if you shout back at your boss or high tail it out of his office, you will lose your job, and so you suppress your feelings. You bottle up the energy you feel inside of you. This causes you to become uptight and tense. This is what Kabat-Zin means by "internalization." This also leads to "chronic hyperarousal," because the pent up energy has no place to go.

As we have seen, chronic hyperarousal, i.e. the long term activation of the stress response, leads to a host of health and mental health issues, from anxiety and depression to chronic headaches and heart disease. These health problems in turn create even more stress for us. This is represented by the red arrows here that trigger again the stress response. So, you can see here a vicious cycle. Stress creates health problems which create more stress, and so on.

To cope with high levels of stress, we often overeat or overwork, engage in self-destructive behaviors, abuse drugs, alcohol, cigarettes, caffeine, and food. We adopt a "maladaptive coping strategy." These coping strategies are maladaptive because they are not healthy. While in the short term, they may offer us some temporary relief, in the long term, they wind up creating more stress for us. We now become stressed out because we have a drinking problem or a drug addiction or need money to buy drugs or because we made a bad decision under the influence of drugs. Hence the red arrows here. In the end, the failure of all of our coping strategies to relieve our stress leads to exhaustion, depression or illness, as our immune systems start to shut down.

⁷ Ibid.

⁸ *Full Catastrophe Living*, Kindle edition

Kabat-Zinn encapsulates the stress reaction cycle nicely in his book, *Full Catastrophe Living*.

This cycle of a stressor triggering a stress reaction of some kind, often accompanied by an internalizing of the stress reaction, leading to inadequate or maladaptive attempts to keep things under control, leading to more stressors, more stress reactions, and ultimately to an acute breakdown in health, perhaps even to death, is a way of life for many of us. When you are caught up in this vicious cycle, it seems that is just the way life is, that there is no other way. You might think to yourself that this is just part of getting older, a normal decline in health, a normal loss of energy or enthusiasm or feelings of control.

But getting stuck in the stress-reaction cycle is neither normal nor inevitable . . . we have far more options and resources for facing our problems than we usually know we have. The healthy alternative to being caught up in this self-destructive pattern is to stop reacting to stress and to start responding to it.⁹

So, here is the problem we need to become aware of—stress can cause us to spin off into a downward spiral. Look at the three loops in the diagram. Stress leads us to make bad decisions which leads to more stress, which leads to more bad decisions, which leads to more stress, which affects our health, which leads to more stress, and down it goes. If we don't learn to cope effectively with stress, we are standing on the precipice of this downward spiral whether we recognize it or not.

We need to learn to *pause* and *respond*, instead of *react*. Reacting is automatic, biologically driven and conditioned. It is not necessarily a bad thing. In certain circumstances, our survival might depend upon it. Imagine, for instance, that as I am driving down the road, an absent minded individual walks out onto the street in front of my car. Without a moment's thought, I slam on my breaks. My car screeches to a halt an inch from him. Reacting saved this person's life.

In this case, there was no time to think, no time to deliberate. But, if we have the time, it is best to take it. As a general rule, it is always a good idea to take the time we need to think about what is best. When we react, we think little, if at all, about what is really best. We just react. As a result, we often regret our decisions later on. Have you, for instance, ever impulsively shot off an email that you later regretted? As Viktor Frankl says, "Between the stimulus and response, there is a space and in that space lies our freedom and power to choose our response."¹⁰

Let's say you have a decision to make. What percentage of your resources do you want available when you make this decision? 20%, 40% or 80%? Most of us would say 100%. It is possible to have 100% of your resources at your disposal.

⁹ Ibid.

¹⁰ Viktor E. Frankl, *Man's Search for Meaning*. (Boston: Beacon, 2006), Kindle Edition.

How do you free yourself from the tight hold of reactivity? An excellent way is to just become mindful. Just become aware of the fight or flight response as it takes place within you. Feel your heart racing, your body temperature rising, your muscles tensing up, the pull of reactivity inside you. What is it that you are driven to do? What emotions do you experience? Can you feel the energy of the fight and flight response pushing you to do something, to react, without getting caught up in it? Just pay attention to the sense of being pulled in by reactivity. When you open yourself up to your experience in this way, you are no longer in danger of suppressing or "internalizing it." If you let it, it will just pass through you, and you will be done with it.

With the proper coaching, you can learn to take a step back from a stressful situation and simply observe it as it unfolds. Instead of reacting, you can choose to "turn toward" your feelings and bodily sensations and simply observe them. You can stop and watch your thoughts. You can observe them without judging them. This will give you a wider perspective on the situation. You will see it with new eyes. You will come to see that the part of you that is aware of the drama isn't itself caught up in the drama. You can then *respond* from a calm, serene place outside the drama rather than *react*.

The director of the Center for Mindfulness at the University of Massachusetts Medical school, Dr. Saki Santorelli, tells a story of two students in an MBSR class of his that were afraid of heights. His classroom was on the seventh floor of the hospital at the time, and each week he would watch these students walk out of the stairwell because they were afraid of riding in the elevator. Around the 6th week, he saw the two of them come up out of the elevator, and the following week as well. So he asked them, what happened?

They said two weeks ago they arranged to meet with someone who wasn't afraid of heights and the three of them rode up the elevator together. He asked, what was your experience? They said their bodies were aroused. They had all the same fearful thoughts and emotions, all the dread that usually kept them walking up the stairs, but they rode the elevator anyway. So he asked, what was different? They said even though they had all the same sensations, thoughts and emotions, somehow they didn't control them. They didn't keep them from trying to ride the elevator.

With practice, we come to see our emotions—fear, anger, resentment—as inside of us, feelings *inside* of us, that come and go. That's all. We are larger than any emotion that is in us. These emotions need not dominate our lives.

To summarize, MBSR teaches us how to become aware of our own reactivity and keep it from running our lives. Many of us do not realize how reactive we are. Mindfulness can help us tune into the times in which we are reactive. We can then look for patterns to our reactive behavior. What situations cause me to react? How do I react? We all have "habitual reactive patterns of behavior." When I took the MBSR course, I came to realize that I tend to react by distancing myself from the people or the situations that disturb me. While in certain cases, this

might be a wise course of action. In other cases, it might not be. But, either way, I'm not freely choosing a course of action, but just reacting. I'm on autopilot without knowing it. Once we become conscious of our reactive patterns of behavior, we can look at the events in our past might have led us to develop these protective strategies in the first place.

Overcoming reactivity is not easy. It takes time. MBSR asks its participants to engage in a formal meditation practice for at least one hour every day. Jon Kabat-Zinn writes, "Mindfulness is a skill that can be developed through practice, just like any other skill [riding a bike, playing the piano]. You could also think of it as a muscle. The muscle of mindfulness grows both stronger and more supple and flexible as you use it."¹¹ Looked at from a neurological point of view, it takes time for the neurons in the brain to rewire. But, it is possible. Meditation has been scientifically proven to change the brains of meditators. World-renowned neuroscientist Richie Davidson at the University of Wisconsin-Madison says that "even short amounts of practice," like 30 minutes of meditation per day, "can induce measurable changes in the brain" that can be tracked on a brain scanner.

I would also add that a formal meditation practice itself can help us calm our systems down, reduce chronic stress in our life. How does it do this? The simple answer is it gets us out of heads and back into the present moment. Recall again Eckhart Tolle's story of duck with a human mind. If the duck keeps replaying the fight over and over again in its mind, its system will never settle down. It will be perpetually stressed out. For the duck to settle down it needs to let go of the past and return to the present moment. If it can do this, it will realize at once that nothing is wrong *right now*—it is gliding peacefully through the water—and its stress response system will de-activate.

If anyone doubts the potential of mindfulness to free us from the grip of reactive conditioning, I would refer him or her to the recent studies done on the startle response. The startle response is one of the most primitive reflexes in the human body's repertoire of responses. If we enter a room, not expecting to find anyone, and someone jumps out from behind the door at us, we experience the startle response. It involves a series of very rapid muscular spasms in reaction to a sudden noise or an unexpected and disturbing sight. What is amazing is that during a series of experiments on the effects of meditation on the brain, it was discovered that Buddhist monks could entirely suppress this response, a feat not thought humanly possible! Matthieu Ricard describes the experiment in his book *Happiness: A Guide to Developing Life's Most Important Skill*:

Like all reflexes, the startle reflex responds to activity in the brain stem, the most primitive part of that organ, and is usually not subject to voluntary control. As far as science is aware, no intentional act can alter the mechanism that controls it... To test the first meditator's startle reflex, Ekman brought him to the Berkeley Psychophysiology Laboratory run by his longtime colleague Robert Levenson. The meditator's body

¹¹ *Full Catastrophe Living*, Kindle edition.

movements, pulse, perspiration, and skin temperature were measured. His facial expressions were filmed to capture his physiological reactions to a sudden noise. The experimenters opted for the maximal threshold of human tolerance—a very powerful detonation, equivalent to a gunshot going off beside the ear. The subject was told that within a five-minute period he would hear a loud explosion. He was asked to try to neutralize the inevitable strong reaction, to the extent of making it imperceptible if possible. Some people are better than others at this exercise, but no one is able to suppress it entirely—far from it—even with the most intense effort to restrain the muscular spasms. Among the hundreds of subjects whom Ekman and Levenson had tested, none had ever managed it. Prior research had found that even elite police sharpshooters, who fire guns every day, cannot stop themselves from flinching. But the meditator was able to.¹²

What is interesting is that even though none of the meditator's facial muscles had quivered, his physiological parameters (pulse, perspiration, blood pressure) had risen in the way usually associated with the startle reflex. This tells us that the fight or flight response was triggered, but nonetheless, the meditator remained free in the face of it. He did not suppress the response, but neither did he let it control him. The meditator's performance suggests a remarkable degree of freedom from reactivity.

Is a complete liberation from undue stress possible? I believe so, but it involves adhering to the whole of the Eightfold Path, not just the part of it directly related to mindfulness. Mindfulness to go deep requires a strong ethical foundation. It should be noted, if only briefly that there is also a connection between metta practice and stress reduction. Stress is ego-centric. It is rooted in a perceived threat to *oneself*. Love knows no stress.

We shouldn't forget that the Buddha first taught metta meditation as an antidote to fear and stress. The legend has it the Buddha sent a group of monks off to meditate in a forest that was inhabited by tree spirits. These spirits resented the presence of the monks and so decided to try and scare them away. They would pop up under frightful guises and make terrible shrieking noises. The tradition says that the stressed out monks ran back to the Buddha and begged him to send them to a different forest to meditate. The Buddha said, "I am going to send you back to the same forest, but I will provide you with the only protection you will need," and he taught them the practice of mettameditation. So, the monks went back and practiced metta. The tree spirits were so moved the beauty of the loving energy filling the forest that they vowed to serve the monks in whatever way they could.

Let us close then with this meta intention: "May all beings be free from undue stress. May all beings be at ease."

¹²Matthieu Ricard, *Happiness: A Guide to Developing Life's Most Important Skill*. (Paris: NiL editions, 2003), Kindle edition.

END NOTES

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